

CLAIMS

1. A nicotine delivery product comprising an intimate mixture of the reaction product of a nicotine/cation exchange resin complex and an organic polyol.
2. A nicotine delivery product according to claim 1, characterized in that the
5 ratio of resin to polyol is from about 1:1 to about 10:1, preferably from 2:1 to 8:1 and most preferably about 2.4:1
3. A method for preparing a nicotine delivery product said method comprising
(a) mixing an aqueous suspension of a nicotine/cation exchange resin complex with an organic polyol or an aqueous solution thereof, and (b) removing
10 water from the mixture to produce said nicotine delivery product.
4. A method for preparing a nicotine delivery product said method comprising
(a) mixing an aqueous solution of nicotine with a cation exchange resin thereby forming a nicotine/cation exchange resin complex,
(b) admixing with said complex of step (a) in aqueous suspension an organic
15 polyol or an aqueous solution thereof to form an aqueous slurry of nicotine/cation exchange resin complex incorporating polyol, and
(c) removing water from said slurry to produce said nicotine delivery product.
5. A method according to claim 3 or 4 wherein the cation exchange resin is selected from the group consisting of
20 (i) a methacrylic, weakly acidic type of resin containing carboxylic functional groups
(ii) a polystyrene, strongly acidic type of resin containing sulfonic functional groups, and
(iii) a polystyrene, intermediate acidic type of resin containing phosphonic
25 functional groups.

6. The method according to claim 5 wherein the cation exchange resin is a methacrylic, weakly acidic type of resin containing carboxylic functional groups.
7. The method according to claim 6 wherein the cation exchange resin is polacrillex (Amberlite® IRP64).
8. A method according to any one of claims 3-7 wherein the organic polyol is a non-toxic C₂ to C₁₂ linear or branched hydrocarbon having at least 2 hydroxy groups.
9. A method according to claim 8 wherein the organic polyol is selected from the group consisting of 1,2-propanediol, 1,3-propanediol, 1,6-hexanediol, glycerol and sorbitol.
10. A method according to any one of claims 3-7 wherein the organic polyol is a non-toxic C₅ to C₁₂ cyclic or heterocyclic hydrocarbon having at least 2 hydroxy groups.
11. A method according to claim 10 wherein the organic polyol is selected from the group consisting of hexahydroxy cyclohexane (inositol) and mono- and disaccharides.
12. A method according to claim 11 wherein the organic polyol is glucose, fructose or sucrose.
13. The method according to any one of claims 3-12, wherein the concentration of nicotine in said aqueous solution of nicotine is from about 5% by weight to about 50% by weight.
14. The method according to any one of claims 3-13, wherein the ratio of cation exchange resin to nicotine is from 1:1 to 10:1.
15. The method according to claim 14, wherein the ratio of cation exchange resin to nicotine is from 2:1 to 6:1.

16. The method according to claim 14, wherein the ratio of cation exchange resin to nicotine is about 4:1.

17. The method according to any one of claims 3-16, wherein the ratio of cation exchange resin to organic polyol is from 1:1 to 10:1.

5 18. The method according to claim 17, wherein the ratio of cation exchange resin to organic polyol is from 2:1 to 8:1.

19. The method according to claim 17, wherein the ratio of cation exchange resin to organic polyol is about 2.4:1.

10 20. A method for preparing a nicotine delivery product having a nicotine release rate of at least 80 % over a 10 minute period, said method comprising

(a) mixing an aqueous solution of nicotine with a cation exchange resin selected from the group consisting of

(i) a methacrylic, weakly acidic type of resin containing carboxylic functional groups,

15 (ii) a polystyrene, strongly acidic type of resin containing sulfonic functional groups, and

(iii) a polystyrene, intermediate acidic type of resin containing phosphonic functional groups

thereby forming a nicotine/cation exchange resin complex,

20 (b) admixing with said complex of step (a) an organic polyol or an aqueous solution thereof to form an aqueous slurry of nicotine/cation exchange resin complex incorporating polyol, and

(c) removing water from said slurry to produce said nicotine delivery product.

25 21. A nicotine delivery product obtainable by a method according to any one of claims 3-20.

22. A chewable gum composition comprising a chewing gum base and a nicotine delivery product as defined in claims 1-3 or prepared by the method defined in any one of claims 3-21 substantially uniformly distributed in said chewing gum base.